

CLAIMS

What is claimed is:

SUB A2

1. A mobile pan and tilt camera and display-control apparatus comprising:
 - a fully rotatable camera mounted to a vehicle for capturing mobile images;
 - a display-control box having an image display screen and control buttons for controlling said camera and its movement attached to an adjustable mount in said vehicle within an operator's view and reach;
 - an image capture box for receiving said captured images.
2. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 wherein said full rotation is achieved by mounting said camera to a tiltable mechanism mounted on a panning mechanism.
3. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 wherein said mount assembly incorporates a quick disconnect mechanism.
4. A mobile pan and tilt camera and display-control apparatus as claimed in claim 3 further comprising a double locking mechanism on said mount assembly where one mechanism is a security fastener.
5. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 further comprising a water seal attached to said mount.

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6. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 wherein said mount assembly is adapted to engage the roof-rack of a vehicle.

~~SUB-A~~ 7. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 wherein said mounting assembly is adapted to engage a Thule^R brand roof rack system.

8. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising a ball-plunger for self-locking.

9. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising a security fastener as a secondary and operator activated mechanical locking mechanism.

10. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 further comprising a singular support for both pan and tilt mechanisms and separate drive gears and slip clutches for both pan and tilt mechanisms.

11. A mobile pan and tilt camera and display-control apparatus as claimed in claim 10 wherein said slip clutch comprises:

- a rotationally free gear;
- a support housing for gear;
- a friction pad co-aligned to said gear;
- a wave washer to apply a pressure against said rotationally free gear and

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said gear housing of sufficient force to enable a motor to drive a transfer housing to a point where said support housing stops said transfer housing from rotation and said rotationally free gear breaks friction of said friction pad while said motor continues to drive without overheating.

12. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising a camera enclosure with bezel opening that is threaded to accept optical filters and is sealed with an o-ring for moisture blocking.
13. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising a Field of View (FOV) stabilized camera which provides an electronic compensation to overcome mechanical gear backlash and vibration.
14. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 wherein said camera may be mounted at any angle with respect to gravity.
15. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising a bimetal heat sink for camera power supply temperature control.
16. A mobile pan and tilt camera and display-control apparatus as claimed in claim 12 wherein said camera enclosure is adapted to act as an additional heat sink.
17. A mobile pan and tilt camera and display-control apparatus as claimed in

claim 1 wherein said camera enclosure incorporates a one-way moisture passage plug with flexible and sealed passage for wires.

18. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 wherein said display and control system have a set of control buttons positioned to be operated with a single hand.

19. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 wherein said display and control system have a viewing angle adjustment lever positioned to be operated with said single hand.

20. A mobile pan and tilt camera and display-control apparatus as claimed in claim 1 further comprising an optically clear or tinted sphere enclosing said camera.

~~Sub A5~~ 21 A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 further comprising mounting mates to a Yakima^R brand roof rack system.

22. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 further comprising said mount with an adapter plate to mate to a light bar used on emergency and patrol guard vehicles.

23. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 wherein said mount is adaptable to a rail road locomotive attachment.

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24. A mobile pan and tilt camera and display-control apparatus as claimed in claim 2 further comprising said mount with adapter plate for ship-board attachment.

25. A process for viewing a scene with a mobile pan or tilt camera comprising the steps of:

- mounting a camera to a vehicle for capturing mobile images;
- displaying said images on an image display screen;
- controlling said camera position from within said vehicle;
- capturing said images in an image capture box for storage and transmission of said captured mobile images; and
- transmitting said captured mobile images by radio frequency transmission to a data storage server for further processing; and
- providing said captured mobile images on internet server for official or consumer access.